Entergy Nuclear Operations, Inc.
Vermont Yankee
320 Governor Hunt Rd.
Vernon, VT 05354
Tel 802 257 7711

Michael J. Colomb
Site Vice President

BVY 10-037

July 26, 2010

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: Licensee Event Report 05000271/2010-001-00, Automatic Reactor Trip due to Switchyard Current Transformer Problem
Vermont Yankee Nuclear Power Station
Docket No. 50-271
License No. DPR-28

Dear Sir or Madam:

As defined by 10 CFR 50.73(a)(2)(iv)(A), we are submitting the attached Licensee Event Report, LER 05000271/2010-001-00, for a Reportable Occurrence that was discovered on May 26, 2010.

There are no new regulatory commitments contained within this correspondence.

Should you have any questions concerning this letter, please contact Mr. Robert J. Wanczyk at (802) 451-3166.

Sincerely,

[MJC/RAM]

Attachment: LER 05000271/2010-001-00, Automatic Reactor Trip due to Switchyard Current Transformer Problem

cc list: (next page)

IE22
NRR

cc: Region 1 Administrator
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406-1415

Mr. James S. Kim, Project Manager
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

USNRC Resident Inspector
Vermont Yankee Nuclear Power Station
320 Governor Hunt Road
Vernon, VT 05354

Mr. David O'Brien, Commissioner
VT Department of Public Service
112 State Street, Drawer 20
Montpelier, VT 05620-2601

NRC Form 366 (9-2007) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES 08/31/2010

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

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4. TITLE

Automatic Reactor Trip due to Switchyard Current Transformer Problem

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME N/A	DOCKET NUMBER
05	26	2010	2010	-- 001 --	00	07	26	2010	FACILITY NAME N/A	DOCKET NUMBER

9. OPERATING MODE

N

10. POWER LEVEL

72%

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)

☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☒ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ OTHER Specify in Abstract below or in NRC Form 366A
☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER (Include Area Code)
Robert J. Wanczyk, Licensing Manager	(802) 451-3166

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED				15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
	YES (If Yes, complete EXPECTED SUBMISSION DATE).	X	NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On May 26, 2010, at approximately 1526 hours, a generator lockout and automatic reactor trip occurred on differential current between a current transformer (CT) installed in the newly commissioned switchyard and a CT installed in the plant. During startup, when the plant reached 72% power, both channels of the reactor protection system (RPS) actuated and all control rods inserted. Following the reactor trip reactor vessel level decreased causing primary containment isolation system (PCIS) actuation for groups 2, 3, 4, and 5. All associated valves functioned correctly. Additionally, both trains of standby gas treatment system actuated. Immediate plant actions included entering appropriate trip response procedures. The operators stabilized the plant and reset both RPS and PCIS. During RFO 28, Vermont Yankee (VY) and the Vermont Electric Power Company (VELCO) commissioned a new 345kV switchyard. The direct cause of the trip was that VELCO changed the CT ratio settings within the 345kV Switchyard and failed to communicate the new ratio setting to VY. As power was increased, the differential current caused by the difference in CT ratio settings resulted in the generator lockout. Corrective actions include adjustment of the VY CT to the correct settings and establishment of the necessary programmatic controls to preclude recurrence. This event is reportable as a licensee event report (LER) per 10CFR50.73(a)(2)(iv)(A) as an event or condition that resulted in actuation of the any of the systems listed in 10 CFR 50.73(a)(2)(iv)(B), which includes RPS and PCIS.

LICENSEE EVENT REPORT (LER)

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17. NARRATIVE *(If more space is required, use additional copies of NRC Form (366A)*

Description of Event

On May 26, 2010, at approximately 1526 hours, a generator lockout and automatic reactor trip occurred on differential current between a current transformer (CT) installed in the newly commissioned switchyard and a CT installed in the plant. During RFO 28, Vermont Yankee (VY) and the Vermont Electric Power Company (VELCO) commissioned a new 345kV switchyard [EIIS = FK].

Just prior to the trip VY was raising power following the 2010 refueling outage (RFO 28) from 72% at 1% every three minutes using the recirculation flow system [EIIS = SK]. At the time of the trip, two of three reactor feed pumps [EIIS = SK] were inservice and there were no significant equipment challenges for the control room operators. Both channels of the reactor protection system (RPS) [EIIS = JD] actuated and all control rods inserted. Following the reactor trip reactor vessel level decreased as expected causing an expected primary containment isolation system (PCIS) [EIIS = BD] groups 2, 3, 4, and 5 actuation signals. All associated valves functioned correctly. Additionally, both trains of standby gas treatment system actuated. Immediate plant actions included entering appropriate trip response procedures. The operators stabilized the plant and reset both RPS and PCIS.

This event is reportable as a licensee event report (LER) per 10CFR50.73(a)(2)(iv)(A) as an event or condition that resulted in actuation of the any of the systems listed in 10 CFR 50.73(a)(2)(iv)(B), which includes RPS and PCIS. On May 26, 2010, at approximately 1725 hours VY completed the required NRC notification in accordance with 10CFR50.72(b)(2)(iv)(B) - RPS Actuation – Critical, and 10CFR50.72(b)(3)(iv)(A) - Valid Specific System Actuation.

Cause of Event

The direct cause of the trip was VELCO's changing of CT ratio settings within the interface between the 345kV Switchyard and not communicating the new ratio settings to VY and not receiving concurrence for the new settings from VY. This change in settings caused a differential current reading between the CT in the new switchyard and the existing CT in the plant to cause a generator lockout on differential current which caused the reactor trip.

Analysis of Event

Although the incident resulted in a trip, operators responded in accordance with established procedures and all plant systems responded as designed. This event did not impact or reduce the margin of nuclear safety and did not result in an industrial safety concern where injuries could have resulted. Further, there were no radiological safety issues associated with the trip. The safety function of the differential relay is to actuate on demand to prevent damage to large electrical components, such as the main generator or main transformer, and to isolate an electrical fault to stabilize the transmission grid. These protective functions operated as designed with the mismatch in settings.

Corrective Actions

Immediate Corrective Actions

- Identified and corrected the CT ratio mismatch that caused the automatic reactor shutdown and performed an extent of condition review.

LICENSEE EVENT REPORT (LER)

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17. NARRATIVE *(If more space is required, use additional copies of NRC Form (366A)*

Ongoing Corrective Actions

- Revise procedures to include verification of CT ratio settings for interface relays.
- Develop or enhance the process which engineering personnel control, review and approve protective relay setting calculations and application.
- Establish written documentation delineating acceptance criteria for verification that the off-site power system is viable prior to re-establishing the connection to the grid following a loss of off-site power, reactor trip, or scheduled shut down.
- Develop a process to control switchyard configuration management to support safe plant operation.

Previous Similar Events

No previous similar events.